

From the subject of measurements Dr. Gray suddenly diverges to make the following observation. Again referring to my paper on *Trionyx Phayrei*, he says, "the sternum is thus described:—'Seven osseous plates, of which five are visible and granular;'" and, seizing on the word "seven," he either believes that I was ignorant of the elementary fact of the number of *plates* that compose the sternum of the tortoise, or twists my words to favour an hypothesis pleasant to himself. He makes the very just supposition that I meant the *nine* sternal bones: but this quibble is unworthy of Dr. Gray; for he had only to look at my figure and he would have discovered the explanation of my using the word *seven*—the transverse suture of the lateral plates being obliterated, the two pairs in this adult specimen being externally resolved into one pair, so that, as I have already observed, only *seven* distinct osseous plates exist. In describing things as they are, it is quite un-called-for to enter into the first principles of things as they have been.

I regret having encroached so much on your valuable space, and the wandering character of this note, which has been introduced, however, by the digressions that distinguish Dr. Gray's article to which this is in reply.

Calcutta, Sept. 16, 1871.

XLI.—*Parasites of the Sponges.* By H. J. CARTER, F.R.S. &c.

MY DEAR DR. FRANCIS,

I hope soon to send you an illustrated paper on the Parasites of Sponges, beginning with Dr. Bowerbank's *Stematumenia*, which, so far as this author's specimen of "fibro-membranous tissue" goes (Brit. Spong. pl. xii. figs. 256 & 260; Annals, 1845, vol. xvi. pl. 14. fig. 1) is no more a sponge, or part of one, than his so-called *Halypysema*. The latter, as you know, I have long since shown in the 'Annals' to be a Foraminifer, dressing itself out in spicules after the manner of the jackdaw with peacock's feathers, but probably not for the same purpose; and the fibre of the former, illustrative of the so-called "fibro-membranous tissue" in *Stematumenia*, I shall soon show to be an Alga, and probably an *Oscillatorium*, which, from its frequently infesting sponges of different kinds in all quarters of the globe, I propose to name "*Spongiophaga communis*."

Schmidt (in 1862, Spong. Adriat., and especially in 1864, Suppl.), after having given a great deal of attention to these

filaments, which have a cell at one end and a spiral twist throughout, admits that they are different from the sponge-cell *par excellence* (*i. e.* the sponge-animal), and after alluding to Kölliker's doubt in 1866, *viz.* whether it be a part of the sponge or a parasite, agrees in 1870 (*Atlantisch. Spong. Faun.*) with Kölliker, that the two structures, *viz.* the sponge-fibre and the fibrillæ, are different, finally ending with the expression that, after much trouble, he can state nothing further respecting the nature of the latter.

In his critique on the synonymy and species of the Keratospongia, in 1864, Schmidt observes, respecting *Auliskia*, that Dr. Bowerbank's illustration of his so-called "compound fistulose keratose fibre" in this genus (*l. c.* pl. 14. fig. 268, and *Annals, l. c.* pl. 13. figs. 1 & 2) proves that it is nothing more than an "Alga," and therefore, being no genus at all, that the name should be expunged. I came to the same conclusion before finding that Schmidt had done so; but am not sure whether the branched filament is part of the mycelium of a *Mucor*, or an Alga allied to *Pythium entophytum* among the Saprolegniæ. Many genera of the Mucedines, especially *Botrytis*, infest the Sponges; but I have not yet, to my knowledge, seen one Saprolegniæ. Dr. Bowerbank's illustrations of his so-called "fibrillated sponge-fibre" of the "Australian sponges" (*l. c.* pl. xvi. figs. 280 & 279) are also of the same kind. In short, no tortuous branched fibres of the sort are proper to the Spongiadæ; and hence all genera based upon them should be suppressed.

The "East-Indian Sponge," too (*l. c.* pl. xx. fig. 307), which Dr. Bowerbank gives in illustration of the "inhalant areas" in this species—Dr. J. E. Gray has correctly stated (*Proc. Zool. Soc. May 1867, p. 514*) that the latter are nothing more than polypes, "probably a parasite like the genus *Bergia* of Michelotti." But I do not wonder at Dr. Bowerbank's mistake here, when, in the figure 374 following, he represents the polypes of *Hyalonema* as the "oscula of a columnar cloacal system" (!).

Of such parasitic polypes there is one which is entirely isolated, another which is concatenated by a stoloniferous prolongation of the polypidom (*viz.* that figured by Dr. Bowerbank as "inhalant areas"), a third in groups, as in Schmidt's *Palythoa* on the sponge *Axinella*, and a fourth in a continuous polypidom entirely surrounding the glass rope of *Hyalonema*.

It seems to me absolutely necessary that, if any one would describe a sponge with accuracy, he should be generally acquainted with all, or at all events with most of the known

lower forms of both animal and vegetable life, since in proportion as this is the case he will avoid such egregious blunders as those above mentioned.

Indeed this observation holds good not only with the Spongiadæ, but with all the lower divisions of animal and vegetable life.

If a man be not generally acquainted with them, besides being a general histologist, it may be inferred that his writings on them will be more or less inaccurate, and thus fail to be of any scientific value; they will be more for show than for usefulness or truthfulness, and, worst of all, occasion a grievous loss of time to the *bonâ fide* student.

I am, my dear Dr. Francis,
Very sincerely yours,
HENRY J. CARTER.

“The Cottage,” Budleigh-Salterton, Devon.
Oct. 18, 1871.

XLII.—*Preliminary Notice of New North-American Phyllopoda.* By A. S. PACKARD, jun., M.D.*

THE following brief descriptions are extracted from a monographical notice of our Phyllopod Crustacea, which, with the exception of the Branchipodidæ, so thoroughly investigated by Prof. Verrill, have been sadly neglected. It will be noticed that North America is rich in the species of *Apus*, more so than any other quarter of the globe so far as yet known. It is a little singular that no species has yet occurred east of the Mississippi river. The species of Limnadiadæ are probably more abundant than naturalists are aware of; and the attention of collectors of shells is called to these *Cyclas*-like-shelled Crustacea, whose shells may not unfrequently be mistaken and passed by as simply species of *Cyclas*. For the privilege of studying the species of *Apus* I am indebted to Dr. William Stimpson, who has lent me the specimens placed on deposit in the Chicago Academy of Sciences by the Smithsonian Institution, and to Prof. A. E. Verrill, who has contributed the specimens in the Yale Museum; while the Museum of Comparative Zoology at Cambridge has contributed a new *Apus* from Northern India; and for the Limnadiads my acknowledgments are due to Mr. G. W. Belfrage, an industrious collector, and Prof. E. S. Morse, who have given several species to the Peabody Academy of Science.

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